

REMARKS

Claims 2, 5, 8, 9, 13 and 15 remain in this application. Claims 1, 3, 12 and 14 are cancelled without prejudice to resubmit the claims in a continuing application. Claims 2, 5, 8, 13 and 15 have been rewritten in independent format, including the limitations of any base and intermediate claims. Claims 4 and 10 have been amended to now depend from claim 5 and claims 6 and 10 have been amended to depend from claim 2. New claims 16 and 17 have been added which correspond to claims 10 and 11, but depend from claim 2. Similarly, new claims 18 and 19 have been added which correspond to claims 10 and 11 but depend from claim 8.

Subsequent to the Office Action of May 21, applicants have received a response in co-pending application Ser. No. 09/727,632 being handled by a different examiner. The claims of this application involve a laser scanning system but do not include the parabolic mirror features of the present claims. However, applicants are submitting with this amendment a copy of the Office Action dated July 10, 2003 received in that case along with the references cited to the extent they are not duplicative in order to satisfy applicants' duty of disclosure. It is not believed that this submission in any way affects the allowability of the present application.

In the first Office Action dated May 21, 2003, the Examiner indicated that claims 2, 5, 8, 9, 13 and 15 were objected to but would be allowed if rewritten in independent form (except for claim 9 which depends from claim 8) including all of the limitations of their respective parent claims. Applicants have so amended the claims, cancelling the remaining claims. Applicants also submit herewith a check to cover the additional fees for the amendment which increases the number of independent claims from 3 as originally presented to 5 as now presented. The newly added claims

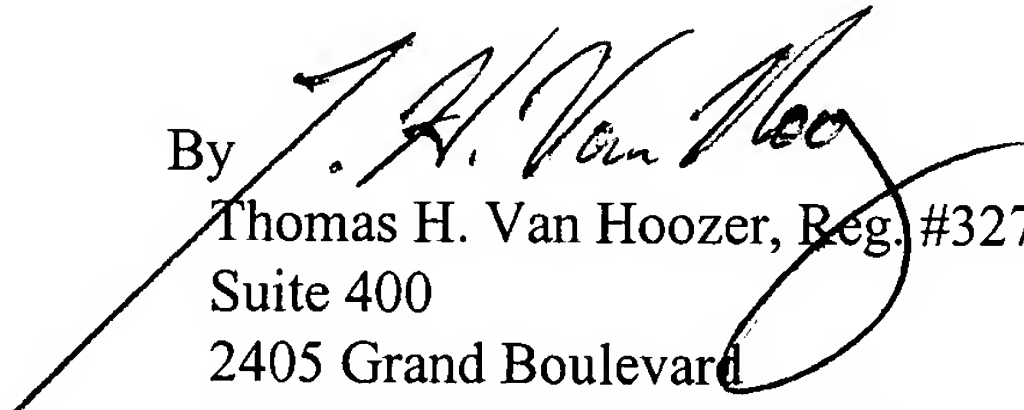
16-19 are similar to claims 10 and 11 which have now been amended to depend from claim 5, but claims 16 and 17 depend from allowable claim 2 and claims 18 and 19 depend from allowable claim 8. Claims 4, 6-7, and 10-11 have been amended to depend from claims which the examiner has found allowable in the first Office Action.

For all of the foregoing reasons, applicant submits the claims are now in proper form, and that all of the claims define patentability over the prior art. Accordingly, early issuance of the Notice of Allowance is courteously requested. Should any additional fees be due in connection with this submission, they may be charged to deposit account 19-0522. Any issues which remain and may be resolved by a telephone conference may directed to the undersigned at 1-800-445-3460.

Respectfully submitted,

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(Docket No. 32227)

Amendment to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)
2. (Currently Amended) In a laser scanning system for determining frame or unibody alignment of a vehicle including at least one reflective laser beam target adapted for placement in a known relationship relative to a selected vehicle reference point, laser scanning apparatus comprising a laser assembly operable to direct a laser beam toward said target, and a detector assembly for receiving a target-reflected laser beam from said target, the improvement which comprises a detector having a substantially parabolic reflective surface oriented to reflect said target-reflected laser beam to the focal point of said substantially parabolic surface, and a detector located substantially at said focal point ~~The system of claim 1,~~ said laser assembly including a pair of laser units, each laser unit comprising a pair of vertically spaced apart laser-generating devices.
3. (Cancelled)
4. (Currently Amended) The system of claim 3 5, said laser assembly and said rotating mirrors located within a housing presenting transparent wall surfaces for passage of said laser beams therethrough.

5. (Currently Amended) In a laser scanning system for determining frame or unibody alignment of a vehicle including at least one reflective laser beam target adapted for placement in a known relationship relative to a selected vehicle reference point, laser scanning apparatus comprising a laser assembly operable to direct a laser beam toward said target, and a detector assembly for receiving a target-reflected laser beam from said target, the improvement which comprises a detector having a substantially parabolic reflective surface oriented to reflect said target-reflected laser beam to the focal point of said substantially parabolic surface, and a detector located substantially at said focal point, said laser assembly being stationary, there being a pair of rotating mirrors respectively located on opposite sides of the laser assembly ~~The system of claim 3~~, each of said rotating mirrors comprising an upright mirror having a relatively wide surface and a relatively narrow reflective edge.

6. (Currently Amended) The system of claim ~~1~~ 2, there being an opening extending through said parabolic reflective surface, said laser ~~assembly~~ assemblies oriented for directing said laser beam through said opening.

7. (Original) The system of claim 6, said detector assembly comprising a pair of substantially parabolic reflective surfaces, each of said substantially parabolic reflective surfaces having an opening therethrough, said laser assembly including structure for directing a respective laser beam through each of said openings.

8. (Currently Amended) In a laser scanning system for determining frame or unibody alignment of a vehicle including at least one reflective laser beam target adapted for placement in a known relationship relative to a selected vehicle reference point, laser scanning apparatus comprising a laser assembly operable to direct a laser beam toward said target, and a detector assembly for receiving a target-reflected laser beam from said target, the improvement which comprises a detector having a substantially parabolic reflective surface oriented to reflect said target-reflected laser beam to the focal point of said substantially parabolic surface, and a detector located substantially at said focal point, there being an opening extending through said parabolic reflective surface, said laser assembly oriented for directing said laser beam through said opening, said detector assembly comprising a pair of substantially parabolic reflective surfaces ~~The system of claim 7~~, each of said substantially parabolic reflective surfaces having a pair of vertically spaced apart openings therethrough, said laser assembly including structure for directing a laser beam through each of said openings.

9. (Original) The system of claim 8, said laser assembly operable to direct each of said laser beams through a 360° sweep.

10. (Currently Amended) The system of claim ~~4~~ 5, including a pair of reflective laser beam targets each adapted for placement on said vehicle at predetermined reference points.

11. (Original) The system of claim 10, said targets being individually coded.

12. (Cancelled)

13. (Currently Amended) In a method of laser scanning for determining frame or unibody alignment of a vehicle including the steps of placing at least one reflective laser beam target in a known relationship relative to a selected vehicle reference point, laser scanning said target by directing a laser beam from a source toward said target, and detecting a target-reflected laser beam from said target, the improvement which comprises directing said laser-reflected beam onto a substantially parabolic reflective surface oriented to reflect the target-reflected laser beam to the focal point of the substantially parabolic surface, and detecting the laser beam from the substantially parabolic reflective surface using a detector located substantially at said focal point
~~The method of claim 12~~, said laser assembly including a pair of laser units, each laser unit comprising a pair of vertically spaced apart laser-generating devices, there being a substantially parabolic reflective surface associated with each of said pair of laser-generating devices each oriented to reflect target-reflective laser beams to the focal point thereof, said method further comprising the steps of directing each pair of said laser beams towards said target, and directing each pair of the laser-reflected beams onto the associated substantially parabolic reflective surface, and detecting each pair of the laser beams using a detector located substantially at the focal point of the associated substantially parabolic reflective surface.

14. (Cancelled)

15. (Currently Amended) ~~The apparatus of claim 14~~ A laser scanning apparatus for determining frame or unibody alignment of a vehicle comprising:
a housing;
a laser assembly located within said housing;
a pair of upright, rotatable mirrors within said housing and on opposite sides of said laser assembly,
said laser assembly and mirrors operable to direct a laser beam toward a vehicle-mounted reflective target; and
a detector assembly for receiving target-reflected laser beams from said target, said detector assembly located within the housing and comprising a substantially parabolic reflective surface oriented to reflect said target-reflected laser beam to the focal point of the substantially parabolic reflective surface, and a detector located substantially at said focal point,
said laser assembly including a pair of laser sources, each laser source comprising upper and lower, vertically spaced apart laser sources operable to direct respective, vertically spaced apart laser beams towards said vehicle-mounted target, said detector assembly including a pair of said substantially parabolic reflective surfaces each associated with corresponding upper and lower laser sources.
16. (New) The system of claim 2, including a pair of reflective laser beam targets each adapted for placement on said vehicle at predetermined reference points.
17. (New) The system of claim 16, said targets being individually coded.
18. (New) The system of claim 9, including a pair of reflective laser beam targets each adapted for placement on said vehicle at predetermined reference points.

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19. (New) The system of claim 18, said targets being individually coded.